APPENDIX B

COMMINGLED WASTE INVESTIGATION FOR

DOE ID NO. GJ-44367-CC (PHASE F)

DENVER & RIO GRANDE WESTERN RAILROAD

7TH STREET

Revised: November 1991

CONTENTS

Tables

Figures

EXECUTIVE SUMMARY

1.0 INTRODUCTION

Due to the size and complexity of the commingled waste investigation of the Denver & Rio Grande Western (D&RGW) Railroad, the railroad properties have been divided into two phases. Phase I of the railroad properties is associated with DOE ID number GJ-44367-CC; Phase II is associated with DOE ID number GJ-45314-CC. Phase I is oriented in an east-west direction between 1st Street and 7th Street, then in northwesterly direction between 1st Street and Broadway Avenue (State Highway 340). Phase I of the railroad properties consists of approximately 116 acres, which was initially subdivided into six phases. An additional phase (Phase G) has recently been added; however, an Appendix B report for this phase is not planned. This Appendix B reports the results of the commingled waste investigation conducted for Phase F of Phase I. Phase F is currently used as a railroad switchyard with rail car loading facilities and structures, and is located between 5th Street and 7th Street on the west and east, and South Avenue and 4th Avenue on the north and south. Figure 1 illustrates the overall railroad properties of Phase I in relationship to the city streets and the individual phases.

Radiological surveys, conducted under the Uranium Mill Tailings Remedial Action (UMTRA) Program, have confirmed the presence of uranium mill tailings on this property. The estimated areal extent and depth of these mill tailings are shown in Figures 2a through 2f. Under the UMTRA Program, these mill tailings will be removed and disposed along with other tailings originating from the Climax Mill Site in Grand Junction, Colorado.

Industrial properties, such as the D&RGW railroad, may contain hazardous wastes that have been mixed with uranium mill tailings. Commingled wastes consist of uranium mill tailings that are mixed with hazardous wastes, as defined by the State of Colorado Hazardous Waste Regulations. The final uranium mill tailings disposal site is not permitted by regulatory authorities to receive hazardous or commingled wastes.

Due to the possible presence of commingled waste on the D&RGW railroad property, a commingled waste investigation was conducted. Investigations of this type are routinely conducted to: (1) confirm that no such substances are transported to the Colorado state-owned temporary repository, and (2) to evaluate the health and safety requirements for Chem-Nuclear Geotech, Inc. (Geotech) employees and subcontractors involved in remedial action activities at this property. The following sections of this report summarize the results of the Commingled Waste Investigation Project (CWIP) activities conducted to date on this property.

2.0 PROPERTY DESCRIPTION

DOE ID Number: G-44367-CC (Phase F).

Location: Phase F of Phase I is located between 5th Street and 7th Street on the west and east, and is bound by South Avenue and 4th Avenue on the north and south, Grand Junction, Colorado.

Lot Size: Approximately 21.5 acres.

Property Use: Metal scrap salvaging, rail car switching, and loading/unloading.

Reason for Commingled Waste Investigation: Current and previous use of this property indicate a potential for hazardous waste to be mixed with uranium mill tailings. This investigation was undertaken in order to determine whether or not hazardous wastes are present with uranium mill tailings identified on the property.

3.0 COMMINGLED WASTE INVESTIGATION SUMMARY

3.1 Sampling Plan Philosophy

The intent of this investigation was to determine if commingled waste is present on the property. Sampling was restricted to include only those areas that were known to also contain uranium mill tailings. The sampling plan was designed to provide generalized information concerning the existence of hazardous and/or toxic wastes at the property. CWIP sampling efforts focused on areas that were suspected of being, or have the potential of being, contaminated with hazardous and/or toxic wastes. That is to say, areas in which the soils were visibly stained or discolored, areas of damaged or hindered plant growth, low-lying areas, drainage ways, or areas that contained scrap material that may have been contaminated with or contained hazardous materials were the primary targets of this investigation. Additionally, observations from the radiological assessment crew, such as observed disposal practices (if any), unusual odors, or abnormal Photo-Ionization Detector (PID) instrument readings, are typically considered.

As detailed in Section 3.6 of this report, the initial analysis indicated the possible presence of commingled waste. As a result, additional samples were collected to determine the extent and the most likely maximum concentration.

3.2 Site History and Possible Sources of Non-Radiological Contaminants

The Lewco Iron and Metal Company is a scrap metal salvage firm that is located within Phase F of the D&RGW railroad properties. Typically, the scrap metal business has a reputation of receiving materials that contain hazardous substances. As such, the commingled waste investigation focused on identifying the possible presence of hazardous materials typically found in conjunction with the type of scrap observed on this property. Toxicity Characteristic Leaching Procedure (TCLP) metals, volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs) were the primary contaminants suspected at this site.

Phase F of this property also has the potential of being contaminated by materials that may have been used on or transported by the railroad. Additionally, the Grand Junction Electric, Gas, and Manufacturing Company's light and ice plant was once located on the north boundary of this property. As such, materials that may have been used or improperly disposed could have conceivably contaminated this property. Listed below, and on the following page, are some additional potential sources of non-radiological contamination that could have originated in the Grand Valley that may have contaminated the D&RGW railroad property as a result of rail transportation.

- Chemical Manufacture and Distribution: The Latimer Chemical Company appears to have been a major chemical manufacturer during the first-half of the century. Their principle product was lead arsenate, an insecticide that was stored in several warehouses near the switchyard. Other chemical companies have operated in southern Grand Junction over the years, such as the Colorado Chemical Company in the 1920s and McKesson Chemical in the 1980s. Chemicals are still distributed at a reduced scale from Grand Junction.

- Mining, Milling, and Smelting: A copper smelter was operated for only a few years in the early 1900s by the Grand Junction Smelting Company. Copper from the Uncompahgre was reportedly produced during that period. The uranium industry still exists, but at a much reduced level. Coal mining also has a long history in the Grand Junction area and still exists.

- Oil and Gas Production, Refining, and Distribution: Southern Grand Junction has been a center for storage and distribution of petroleum products since early in the century. Grand Junction has a history of oil refining with much of the oil being produced from gilsonite mined in Utah.

- Agriculture: Grand Junction has a history of farming, fruit orchards, canning, ranching, and meat packing, and has been a distribution center for agricultural chemicals.

3.3 Site Photographs

A review of historic aerial photographs was performed to determine the location of potential releases, evidence of existing or past vegetation stress, potential routes for contaminant migration, location and size of possible target populations, and land use in the area.

No conclusions could be positively drawn from these aerial photographs regarding direct indications of possible contaminants. There are subtle changes in the pattern of dark soil through the years. This could be attributed to construction and grading that moved surface coal and coal cinders left by the railroad.

3.4 Laboratory Analyses

The samples collected from DOE ID number GJ-44367-CC (Phase F) were analyzed by the Geotech Analytical Laboratory according to the U.S. Environmental Protection Agency (EPA), Office of Solid Waste and Emergency Response, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition (Reference 1).

The characteristic of ignitability was determined by using the Geotech *Revised Ignitability Test Procedure for Petroleum Contaminated Mill Tailings* (Reference 2). Table 1 summarizes the analytical results for all analysis performed, except for the PCB analytical data, which are presented in Table 2.

The data derived from the sampling efforts were used in conjunction with the flowchart shown in Figure 3 to define the presence of hazardous waste (and therefore, commingled waste) on the property. The analytical results of the sampling effort and the conclusions are discussed below.

3.5 Data Validation

Sample analyses were provided by Geotech's Analytical Laboratory. This data were reviewed and validated in accordance with Geotech's *Analytical Chemistry Laboratory Administrative Plan and Quality Control Methods*, Revision 13, September 28, 1990 (Reference 3).

3.6 Hazardous Waste Characteristic Analysis

Two samples (MNX-888 and MNX-889) contained concentrations of lead that exceeded the specified toxicity limits. Sample Number MNX-888 was collected at Grid Location 360260-7 (Figure 2d); the TCLP lead concentration is 1.28 mg/l. Although this concentration is below the TCLP regulatory limit of 5.0 mg/l, the result was above the minimum analytical detection limit (i.e., 1.0 mg/l). Sample Number MNX-889 was collected from Grid Location 410120-7 (Figure 2d); the detected concentration of TCLP lead for this sample is 5.50 mg/l.

Since the observed concentrations for both samples are close to the threshold value, additional sampling will demonstrate that the contamination is either an isolated *hot-spot*, and that the surrounding area is below levels of concern, or that the locations in which the contaminants were observed are part of a larger contaminated area which requires additional characterization.

Additional sampling was performed at Grid Location 410120-7 (Figure 2d), in an attempt to characterize the lateral extent of the lead contamination. Sample Number MNX-643 was a four point composite sample collected from the perimeter of a circle (with a radius of 7.5 feet) centered around the original sampling point. Each aliquot was collected from the 0°, 90°, 180°, and the 270° positions. The TCLP lead concentration for this sample was reported as 16.3 mg/l. Another four point composite sample (MNX-644) was collected at a radial distance of 10 feet from the original sampling point. The analytical results for this sample indicate that the TCLP lead concentration for the composited area is 7.58 mg/l. The observed TCLP lead concentrations in this area did not appear to be an isolated *hot-spot*, rather they appear to be elevated over the entire deposit. As a result, the deposit centered at Grid Location 410120-7 (Deposit Y, Figure 2d and Figure 2e) has been determined to be contaminated with characteristic hazardous waste (elevated lead concentrations) and therefore is also considered to be a commingled waste area.

Additional sampling was also performed at Grid Location 360260-7 (Figure 2d), in an attempt to determine if the initial detection of elevated lead concentrations was an isolated *hot-spot*, or if high levels of lead were characteristic of the entire deposit. Sample Number MNX-591 was a four point composite sample collected from the perimeter of a circle (with a radius of 2.5 feet) centered around the original sample point. Each aliquot was collected from the 0°, 90°, 180°, and 270° positions. The TCLP lead concentration for this sample was reported as 7.52 mg/l.

Sample Number MNX-592 was another four point composite sample collected at a radial distance of 5.0 feet from the original sample point. The analytical result for TCLP lead for this sample was 8.37 mg/l. The lead concentrations observed in the deposit centered at Grid Location 360260-7 (Figure 2d) also appear to be elevated over the entire deposit, and are not characteristic of isolated *hot-spot*. Workers from a nearby salvage business confirmed that discarded automobile batteries had been stockpiled at this location. These reports are consistent with the elevated lead concentrations observed in the CWIP samples from this area. This area has been determined to be contaminated with characteristic hazardous waste (elevated lead concentrations) and therefore is also considered to be a commingled waste area.

Sample Numbers MNX-245 and MNX-247, collected from Grid Locations 400400-2 and 340450-2 (Figure 2a), respectively, exhibited a flash point below 100° Fahrenheit. No hazardous constituents were found during laboratory analysis of these samples, and the PID instrument used during sample collection did not detect any volatile compounds. The soil did not contain any visible oil or staining. Since there is no other evidence that hazardous materials are present at these locations, it is unlikely that the material, if ignited, could burn so vigorously and persistently to create a hazard. Therefore, even though the samples exhibited a flash point below 100° Fahrenheit, the body of evidence indicates that this material is not characteristically ignitable.

All samples collected from this site consisted of materials that have been exposed to the weather and elements for many years without any evidence of reaction. There is no evidence to indicate that the uranium mill tailings contain cyanides or sulfides, or that the mill tailings are readily capable of detonation: therefore, the materials can be considered non-reactive.

The characteristic or corrosivity applies only to liquid wastes; the uranium mill tailing samples were solid. Therefore, the characteristic of corrosivity does not apply.

No other characteristic wastes were observed at any of the other CWIP sampling locations at this property. Therefore, remedial activities at this site may proceed, with the exception of the two areas as discussed above. It is recommended that these areas be considered as being contaminated with commingled waste, and should be excluded from the remedial design accordingly.

3.7 Listed Hazardous Waste Evaluation

There is no historical or analytical evidence to suggest that listed hazardous wastes are present at this property.

3.8 PCB Contamination Evaluation

Certain toxic wastes are also regulated by the EPA through the Toxic Substance Control Act (TSCA). PCBs are of particular concern because of their widespread use in electrical equipment.

The initial sampling campaign, conducted during December 1990, revealed the widespread presence of low concentrations of PCBs on this property. Although the observed concentrations were below the 50 parts per million (ppm) cleanup criteria, the concentrations were sufficiently high to suspect that even higher concentrations could be present. As a result, two composite samples were collected from the five locations suspected of containing higher PCB contamination. The suspected Grid Locations were 340450-2, 265380-2, 400400-2, 360260-7, and 410120-7 (Figures 2a and 2d).

Five sample locations exhibited an elevated PCB concentration; therefore, a second sampling campaign targeted PCBs. A composite sampling strategy was used to define the extent of PCB contamination at these locations. The composite samples again indicated elevated PCB concentrations.

Sample Numbers MNX-592 and MNX-592-H confirmed that PCB contamination exceeded the 50 ppm limit at one location (Grid Location 360260-7, Figure 2d). Additionally, the PCB concentrations in the other composite samples were sufficiently high to indicate that one of the individual aliquots could have also exceeded 50 ppm; therefore, each individual aliquot was also analyzed for PCBs. The data for both sampling campaigns is shown in Table 2. Only Aroclor 1254 and Aroclor 1260 data are shown in Table 2. Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, and Aroclor 1243 were also targeted; however, none were detected.

The analytical data indicate that the area assessed as contaminated with uranium mill tailings at Grid Location 360260-7 (Figure 2d) is also contaminated with both elevated concentrations of lead and PCBs, and should be excluded from the remedial design accordingly.

4.0 EXTENT OF COMMINGLED WASTE CONTAMINATION

Due to the high concentrations of PCBs and lead observed around Grid Location 360260-7 (Figure 2d), it is unlikely that additional sampling

could produce an average concentration that is below the respective levels of regulatory concern. This area has previously been identified as containing uranium mill tailings; therefore, the area around Grid Location 360260-7 (Figure 2d) is considered a commingled waste area and must be excluded from the remedial design of this property.

The area assessed as contaminated with uranium mill tailings (Grid Location 410120-7 [Figures 2d and 2e, Deposit Y] is also contaminated with elevated concentrations of lead. This area is therefore considered a commingled waste area and should be excluded from the remedial design of this property.

5.0 RECOMMENDED REMEDIAL ACTION

It is recommended that the areas of commingled waste, described in Section 4.0 previously, be excluded from the remedial design of this property. Furthermore, these areas should be fenced off and posted accordingly.

The uranium mill tailings associated with this property that contain no hazardous or toxic constituents should be removed and transported to the state-owned temporary repository. No additional recommendations or precautions are provided beyond those normally addressed during the development of the remedial action design and specifications, and the health and safety evaluations required under the applicable Occupational Health and Safety Act (OSHA) standards.

:pr

Prepared By: Russell D. Walker FOR Date: 11/4/91
Michael J. Gardner
Commingled Waste Investigation Project

Approved By: Gary J. Neff Date: 11-4-91
Gary J. Neff
Commingled Waste Investigation Project

REFERENCE

1. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, November 1986, *Test Methods for Evaluating Solid Waste*, SW-846, Third Edition, Washington D.C.

2. Chem-Nuclear Geotech, Inc., D.J. Haley to Distribution, September 13, 1990, *Revised Ignitability Test Procedure for Petroleum Contaminated Mill Tailings*.

3. Chem-Nuclear Geotech, Inc., September 28, 1990, *Analytical Chemistry Laboratory Administrative Plan and Quality Control Methods*, Revision 13 (Internal document).

TABLE 1

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-243	120280-2	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-244	460200-2	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-244	460200-2	0 - 6	**HERBICIDES:**		
			• 2,4-D	14.1 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-245	400400-2	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-245	400400-2	0 - 6	METALS:		
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	76° F	100° F
MNX-246	375395-2	0 - 6	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-247	340450-2	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**82° F**	**100° F**
MNX-248	255380-2	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-248	255380-2	0 - 6	**HERBICIDES:**		
			• 2,4-D	8.4 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-585	340450-2	0 - 6	**VOLATILE ORGANIC COMPOUNDS:**		
			• Acetone	< DL	---
MNX-586	400400-2	0 - 6	**VOLATILE ORGANIC COMPOUNDS:**		
			• Acetone	4.0 ug/kg	---
MNX-249	345350-3	0 - 6	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*		APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-249	345350-30	0 - 6	**HERBICIDES:**			
			• 2,4-D	6.2	ug/L	10.0
			• 2,4,5-T	< DL		400.0
			• 2,4,5-TP (Silvex)	< DL		1.0
			METALS:			
			• Arsenic	< DL		5.0
			• Barium	< DL		100.0
			• Cadmium	0.420	mg/L	1.0
			• Chromium	< DL		5.0
			• Lead	< DL		5.0
			• Mercury	< DL		0.2
			• Selenium	< DL		1.0
			• Silver	< DL		5.0
			IGNITABILITY	**> 100° F**		**100° F**
MNX-250	180290-3	0 - 6	**PESTICIDES:**			
			• Chlordane	< DL		0.03
			• Endrin	< DL		0.02
			• Heptachlor	< DL		0.008
			• Lindane	< DL		0.4
			• Methoxychlor	< DL		10.0
			• Toxaphene	< DL		0.5
			HERBICIDES:			
			• 2,4-D	20.9	ug/L	10.0
			• 2,4,5-T	< DL		400.0
			• 2,4,5-TP (Silvex)	< DL		1.0
			METALS:			
			• Arsenic	< DL		5.0
			• Barium	< DL		100.0

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-250	180290-3	0 - 6	METALS:		
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F
MNX-884	180290-3 (Replicate)	0 - 6	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	16.2 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (ug/L)**
MNX-885	185170-3	0 - 6	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	2.4 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F
MNX-593	180290-3	0 - 6	VOLATILE ORGANIC COMPOUNDS:		
			• Acetone	802 ug/kg	---
MNX-594	Trip Blank	0 - 6	VOLATILE ORGANIC COMPOUNDS:		
			• Acetone	5.0 ug/kg	---

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-890	300335-4	0 - 9	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	0.7 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-886	280440-7	0 - 9	**PESTICIDES:**		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-886	280440-7	0 - 9	HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-887	370350-7	0 - 9	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-887	370350-7	0 - 9	METALS:		
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F
MNX-888	360260-7	0 - 9	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	0.240 mg/L	1.0
			• Chromium	< DL	5.0
			• Lead	1.28 mg/L	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100.0

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-889	410120-7	0 - 9	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	X 0.550 mg/L	1.0
			• Chromium	< DL	5.0
			• Lead	5.50 mg/L	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	**> 100° F**	**100° F**
MNX-588	410120-7	0 - 9	METALS:		
			• Lead	< DL	5.0
MNX-589	410120-7	0 - 9	METALS:		
			• Lead	< DL	5.0
MNX-590	410120-7	0 - 9	METALS:		
			• Lead	< DL	5.0

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-591	360260-7	0 - 9	METALS:		
			• Lead	7.52 mg/L	5.0
MNX-592	360260-7	0 - 9	METALS:		
			• Lead	8.37 mg/L	5.0
MNX-241	345430-9	0 - 9	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02
			• Lindane	< DL	0.4
			• Heptachlor	< DL	0.008
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
			HERBICIDES:		
			• 2,4-D	4.6 ug/L	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F
MNX-242	460390-9	0 - 9	PESTICIDES:		
			• Chlordane	< DL	0.03
			• Endrin	< DL	0.02

TABLE 1 (Continued)

ANALYTICAL RESULTS

TICKET SAMPLE NUMBER	SAMPLE LOCATION	DEPTH (in.)	TARGET COMPOUND	ANALYTICAL RESULT*	APPLICABLE REGULATORY LIMIT (mg/L)**
MNX-242	460390-9	0 - 9	PESTICIDES:		
			• Heptachlor	< DL	0.008
			• Lindane	< DL	0.4
			• Methoxychlor	< DL	10.0
			• Toxaphene	< DL	0.5
MNX-242	460390-9	0 - 9	HERBICIDES:		
			• 2,4-D	< DL	10.0
			• 2,4,5-T	< DL	400.0
			• 2,4,5-TP (Silvex)	< DL	1.0
			METALS:		
			• Arsenic	< DL	5.0
			• Barium	< DL	100.0
			• Cadmium	< DL	1.0
			• Chromium	< DL	5.0
			• Lead	< DL	5.0
			• Mercury	< DL	0.2
			• Selenium	< DL	1.0
			• Silver	< DL	5.0
			IGNITABILITY	> 100° F	100° F
MNX-643	410120-7 (Re-sample) 7.5' Radius	0 - 9	TCLP LEAD:	16.3 mg/L	5.0
MNX-644	410120-7 (Re-sample) 10.0' Radial Composite	0 - 9	TCLP LEAD:	7.58 mg/L	5.0

* = DL (Detection Limit)
** = A blank indicates that no regulatory limit is specified.

TABLE 2

PCB ANALYTICAL DATA SUMMARY

CENTRAL LOCATION (See Note 1)	SAMPLE NUMBER	TYPE	DATE COLLECTED	AROCLOR 1254 µg/kg (See Note 2)	AROCLOR 1260 µg/kg (See Note 2)
--	MNX-594	Trip Blank	02/14/91	< DL	< DL
--	MNX-583	Equipment Blank	02/14/91	< DL	< DL
120280-2	MNX-243	Point	12/19/90	< DL	< DL
265380-2	MNX-248	Point	12/19/90	16,016	< DL
265380-2	MNX-587AC	2.5 ft. compste	02/14/91	11,352	< DL
265380-2	MNX-587BC	5.0 ft. compste	02/14/91	12,851	< DL
265380-2	MNX-587-A	Point	02/14/91	6,927	< DL
265380-2	MNX-587-B	Point	02/14/91	3,121	< DL
265380-2	MNX-587-C	Point	02/14/91	13,134	< DL
265380-2	MNX-587-D	Point	02/14/91	30,756	< DL
265380-2	MNX-587-E	Point	02/14/91	30,883	< DL
265380-2	MNX-587-F	Point	02/14/91	14,721	< DL
265380-2	MNX-587-G	Point	02/14/91	13,976	< DL
265380-2	MNX-587-H	Point	02/14/91	4,043	< DL
340450-2	MNX-247	Point	12/19/90	917	< DL
340450-2	MNX-585AC	2.5 ft. compste	02/14/91	173	< DL
340450-2	MNX-585BC	5.0 ft. compste	02/14/91	193	< DL
340450-2	MNX-585-A	Point	02/14/91	< DL	< DL
340450-2	MNX-585-B	Point	02/14/91	187	< DL
340450-2	MNX-585-C	Point	02/14/91	191	< DL
340450-2	MNX-585-D	Point	02/14/91	< DL	< DL
340450-2	MNX-585-E	Point	02/14/91	< DL	< DL
340450-2	MNX-585-F	Point	02/14/91	< DL	< DL
340450-2	MNX-585-G	Point	02/14/91	< DL	< DL
340450-2	MNX-585-H	Point	02/14/91	< DL	< DL
385305-2	MNX-246	Point	12/19/90	214	< DL
400400-2	MNX-245	Point	12/19/90	243	< DL
400400-2	MNX-586AC	2.5 ft. compste	02/14/91	1,480	< DL
400400-2	MNX-586BC	5.0 ft. compste	02/14/91	262	< DL

TABLE 2

PCB ANALYTICAL DATA SUMMARY (continued)

CENTRAL LOCATION (See Note 1)	SAMPLE NUMBER	TYPE	DATE COLLECTED	AROCLOR 1254 µg/kg (See Note 2)	AROCLOR 1260 µg/kg (See Note 2)
400400-2	MNX-586-A	Point	02/14/91	541	< DL
400400-2	MNX-586-B	Point	02/14/91	1,306	< DL
400400-2	MNX-586-C	Point	02/14/91	455	< DL
400400-2	MNX-586-D	Point	02/14/91	< DL	< DL
400400-2	MNX-586-E	Point	02/14/91	367	< DL
400400-2	MNX-586-F	Point	02/14/91	256	< DL
400400-2	MNX-586-G	Point	02/14/91	< DL	< DL
400400-2	MNX-586-H	Point	02/14/91	480	< DL
460200-2	MNX-244	Point	12/19/90	245	< DL
180290-3	MNX-884	Point	12/19/90	244	< DL
180290-3	MNX-250	Point	12/19/90	280	< DL
180290-3	MNX-593	Point	02/14/91	802	< DL
185170-3	MNX-885	Point	12/19/90	198	< DL
345350-3	MNX-249	Point	12/19/90	498	< DL
300355-4	MNX-890	Point	12/19/90	102	< DL
280440-7	MNX-886	Point	12/19/90	< DL	< DL
360260-7	MNX-888	Point	12/19/90	3,515	< DL
360260-7	MNX-591	2.5 ft. compste	02/14/91	< DL	4,541
360260-7	MNX-591-A	Point	02/14/91	< DL	7,070
360260-7	MNX-591-B	Point	02/14/91	< DL	3,448
360260-7	MNX-591-C	Point	02/14/91	< DL	10,357
360260-7	MNX-591-D	Point	02/14/91	< DL	3,391
360260-7	MNX-592	5.0 ft. compste	02/14/91	579,175	< DL
360260-7	MNX-592-E	Point	02/14/91	< DL	4,495
360260-7	MNX-592-F	Point	02/14/91	< DL	6,666
360260-7	MNX-592-G	Point	02/14/91	< DL	44,016
360260-7	MNX-592-H	Point	02/14/91	1,273,165	< DL
370350-7	MNX-887	Point	12/19/90	880	< DL

TABLE 2

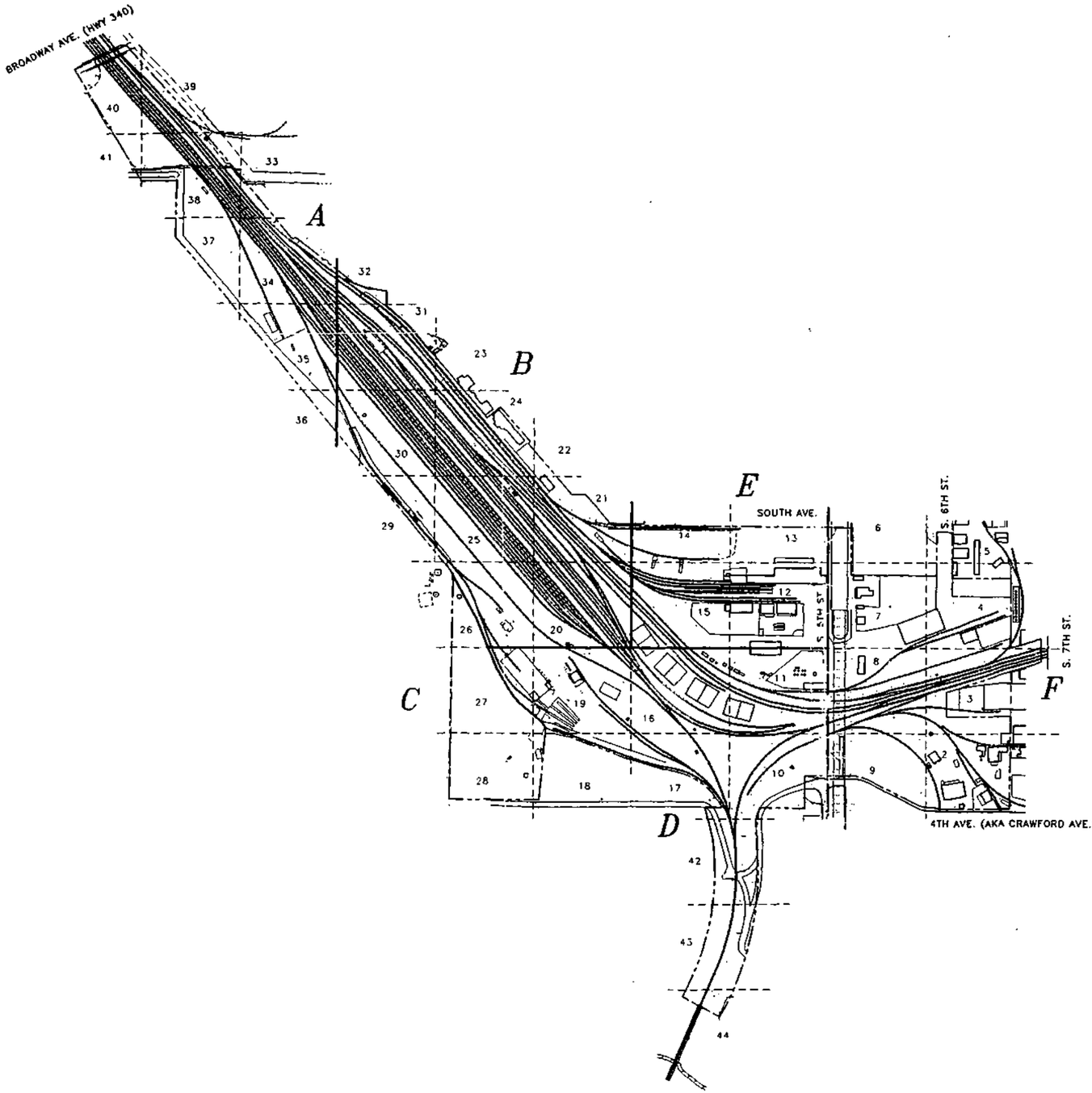
PCB ANALYTICAL DATA SUMMARY (continued)

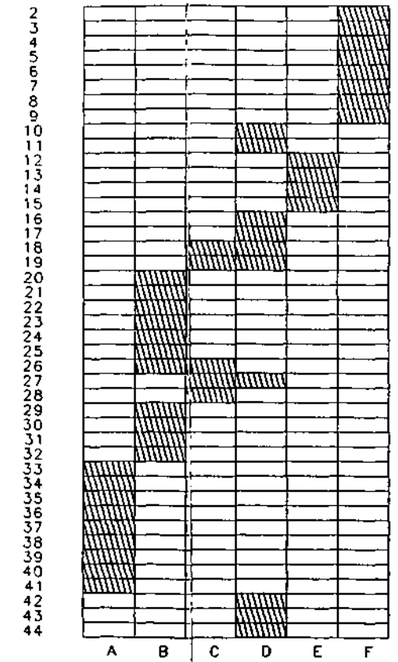
CENTRAL LOCATION (See Note 1)	SAMPLE NUMBER	TYPE	DATE COLLECTED	AROCLOR 1254 µg/kg (See Note 2)	AROCLOR 1260 µg/kg (See Note 2)
410120-7	MNX-889	Point	12/19/90	5,924	< DL
410120-7	MNX-588	2.5 ft. compste	02/14/91	< DL	8,838
410120-7	MNX-588-A	Point	02/14/91	< DL	5,959
410120-7	MNX-588-B	Point	02/14/91	< DL	6,328
410120-7	MNX-588-C	Point	02/14/91	< DL	8,962
410120-7	MNX-588-D	Point	02/14/91	< DL	10,789
410120-7	MNX-589	5.0 ft. compste	02/14/91	< DL	8,626
410120-7	MNX-590	5.0 ft. compste (replicate)	02/14/91	< DL	8,939
410120-7	MNX-589-E	Point	02/14/91	< DL	4,908
410120-7	MNX-589-F	Point	02/14/91	< DL	3,661
410120-7	MNX-589-G	Point	02/14/91	< DL	8,621
410120-7	MNX-589-H	Point	02/14/91	< DL	11,804
345430-9	MXN-241	Point	12/19/90	< DL	< DL
460390-9	MNX-242	Point	12/19/90	< DL	< DL

Footnotes:

1. The central grid location is the location of the initial sample and around which the composits were collected.

2. The observed detection limits were 160 µg/kg.

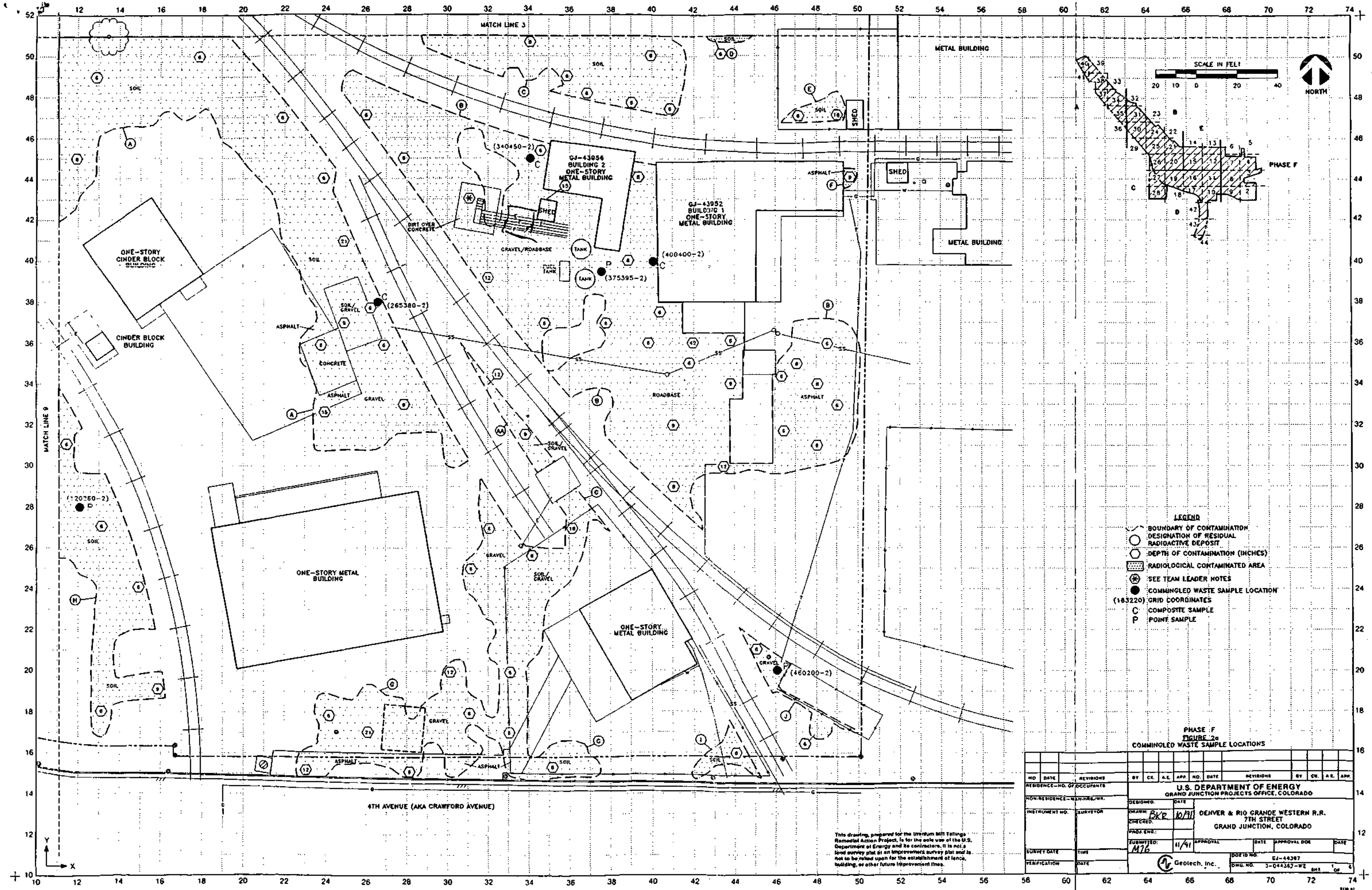




PHASE G CONSTITUTES ALL AREAS WITHIN 10' EITHER SIDE OF THE TRACK RAILS AND INTERSECTS PHASE A–F

FIGURE 1
PHASE DIAGRAM

DENVER & RIO GRANDE WESTERN R.R.
GJ-44367
NOVEMBER 1, 1991


MATCH LINE 3
MATCH LINE 9
METAL BUILDING
SOIL
SHED
GJ-43956
BUILDING 2
ONE-STORY
METAL BUILDING
GJ-43952
BUILDING 1
ONE-STORY
METAL BUILDING
ASPHALT
DIRT OVER CONCRETE
GRAVEL/ROADBASE
TANK
FUEL TANK
(340450-2)
(400400-2)
(375395-2)
(265380-2)
(120260-2)
(460200-2)
ONE-STORY CINDER BLOCK BUILDING
CINDER BLOCK BUILDING
SOIL/GRAVEL
CONCRETE
GRAVEL
ROADBASE
ONE-STORY METAL BUILDING
4TH AVENUE (AKA CRAWFORD AVENUE)
SCALE IN FEET
NORTH
PHASE F
LEGEND
BOUNDARY OF CONTAMINATION
DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
DEPTH OF CONTAMINATION (INCHES)
RADIOLOGICAL CONTAMINATED AREA
SEE TEAM LEADER NOTES
COMMINGLED WASTE SAMPLE LOCATION
(183220) GRID COORDINATES
C COMPOSITE SAMPLE
P POINT SAMPLE
PHASE F
FIGURE 2a
COMMINGLED WASTE SAMPLE LOCATIONS
This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.
U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO
DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO
DRAWN: BKR 10/91
SUBMITTED: M76 11/91
Geotech, Inc.
DOE ID NO. GJ-44367
DWG. NO. 3-044367-W2
SHT. 1 OF 6

MATCH LINE 4

MATCH LINE 2

MATCH LINE 3

METAL SHED

METAL BUILDING

ONE-STORY METAL BUILDING

METAL BUILDING

SOIL

GRAVEL

(180290-3) P

(185170-3) P

(185359-3)

SCALE IN FEET

20 10 0 20 40

NORTH

PHASE F

LEGEND

- BOUNDARY OF CONTAMINATION
- DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- DEPTH OF CONTAMINATION (INCHES)
- RADIOLOGICAL CONTAMINATED AREA
- COMMINGLED WASTE SAMPLE LOCATION
- (183220) GRID COORDINATES
- C COMPOSITE SAMPLE
- P POINT SAMPLE

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

PHASE F
FIGURE 2b
COMMINGLED WASTE SAMPLE LOCATIONS

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

RESIDENCE—NO. OF OCCUPANTS

NON-RESIDENCE—BUILDING

INSTRUMENT NO. SURVEYOR

SURVEY DATE TIME

VERIFICATION DATE

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

DESIGNED: DATE

DRAWN: BKR 10/91

CHECKED:

PROJ. ENG.:

SUBMITTED: 11/91

APPROVAL DATE

APPROVAL DOE DATE

DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO

Geotech, Inc.

D&M ID NO.

CJ-44367

DWG. NO. 3-044362-W3 SHT. 2 OF 6

MATCH LINE 5

MATCH LINE 7

MATCH LINE 3

SHED

SHED

METAL SHED

ONE-STORY METAL BUILDING

ONE-STORY METAL BUILDING

BRICK BUILDING

SOIL

SOIL

SOIL

GRAVEL

GRAVEL

GRAVEL

GRAVEL

GRAVEL

P (300335-4)

SCALE IN FEET

20 10 0 20 40

NORTH

PHASE F

A

B

C

D

E

LEGEND

- BOUNDARY OF CONTAMINATION
- DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- DEPTH OF CONTAMINATION (INCHES)
- RADIOLOGICAL CONTAMINATED AREA
- COMMINGLED WASTE SAMPLE LOCATION
- (183220) GRID COORDINATES
- C COMPOSITE SAMPLE
- P POINT SAMPLE

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

PHASE F
FIGURE 2c
COMMINGLED WASTE SAMPLE LOCATIONS

NO.	DATE	REVISIONS	BY	CR.	A.E.	APP.

RESIDENCE-NO. OF OCCUPANTS

NON-RESIDENCE-MAN-HRS./WK.

INSTRUMENT NO. SURVEYOR

SURVEY DATE TIME

VERIFICATION DATE

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

DESIGNED: DATE

DRAWN: BKR 10/91

CHECKED:

PROJ. ENG.:

SUBMITTED: 11/91

APPROVAL DATE

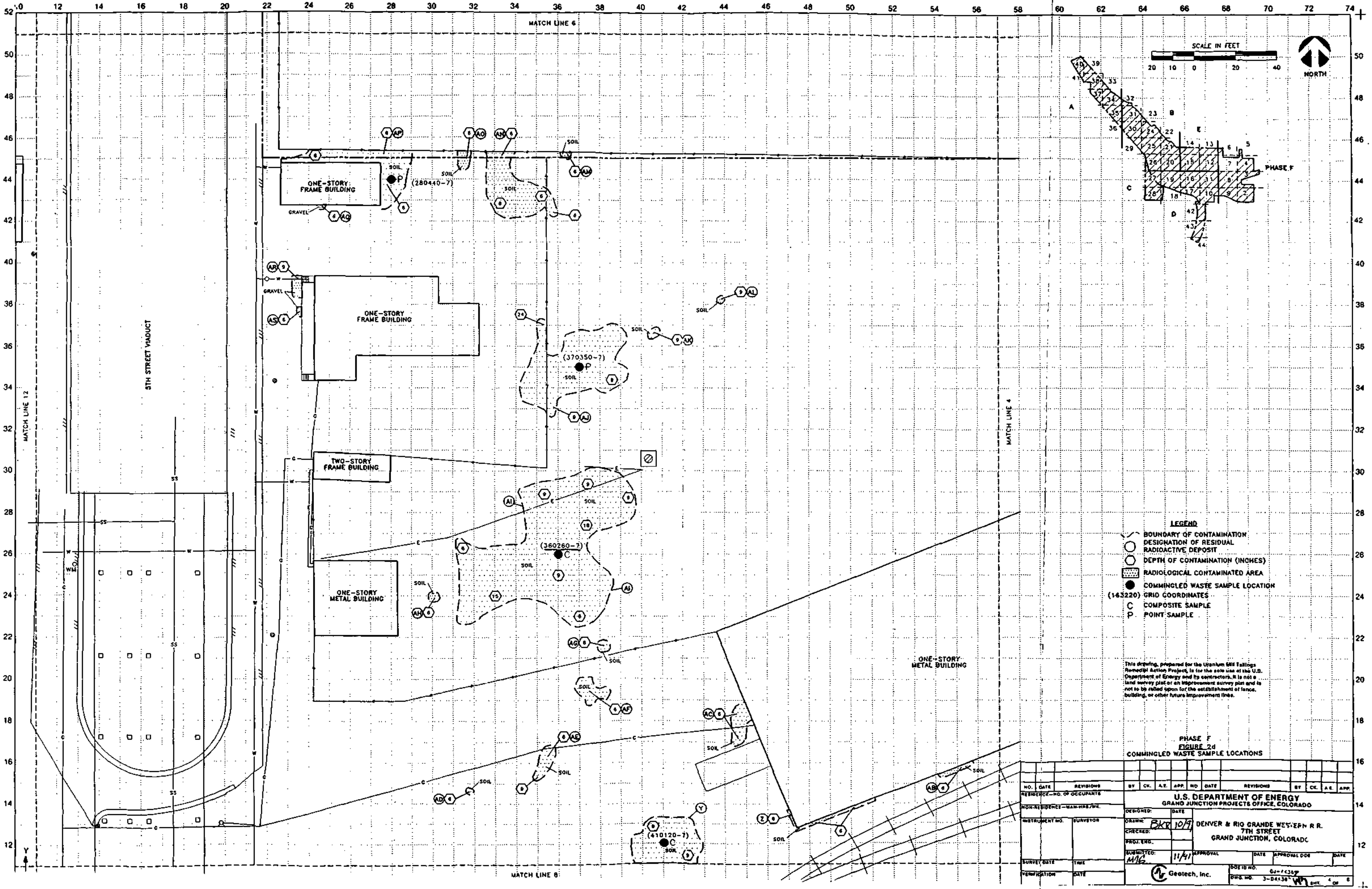
APPROVAL BOE DATE

DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO

Geotech, Inc.

DOE ID NO. GJ-44387

DWG. NO. 3-044387-W4 SHT. 5 OF 8


MATCH LINE 6
MATCH LINE 12
MATCH LINE 4
MATCH LINE 8
5TH STREET VIADUCT
ONE-STORY FRAME BUILDING
ONE-STORY FRAME BUILDING
TWO-STORY FRAME BUILDING
ONE-STORY METAL BUILDING
ONE-STORY METAL BUILDING
(280440-7) P
(370350-7) P
(360260-7) C
(410120-7) C
SOIL
GRAVEL
SCALE IN FEET
20 10 0 20 40
NORTH
PHASE F
LEGEND
BOUNDARY OF CONTAMINATION
DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
DEPTH OF CONTAMINATION (INCHES)
RADIOLOGICAL CONTAMINATED AREA
COMMINGLED WASTE SAMPLE LOCATION
(163220) GRID COORDINATES
C COMPOSITE SAMPLE
P POINT SAMPLE
This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plan and is not to be relied upon for the establishment of fence, building, or other future improvement lines.
PHASE F
FIGURE 2d
COMMINGLED WASTE SAMPLE LOCATIONS
U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO
DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO
DRAWN: BKR 10/91
SUBMITTED: MJG 11/91
Geotech, Inc.
SHT. 4 OF 6

MATCH LINE 7

MATCH LINE 11

MATCH LINE 3

MATCH LINE 9

5TH STREET VIADUCT

ONE-STORY CINDER BLOCK BUILDING

SOIL

GRAVEL

SOIL/GRAVEL

SCALE IN FEET

20 10 0 20 40

NORTH

PHASE F

A B C D E S

LEGEND

- BOUNDARY OF CONTAMINATION
- DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- DEPTH OF CONTAMINATION (INCHES)
- RADIOLOGICAL CONTAMINATED AREA

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

PHASE F
FIGURE 2a
COMMINGLED WASTE SAMPLE LOCATIONS

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.
		RESIDENCE—NO. OF OCCUPANTS				
		NON-RESIDENCE—MAN-HRS/WK.				

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

DESIGNED: DATE
DRAWN: PKR 10/91
CHECKED:
PROJ. ENG.:
SUBMITTED: 11/91

DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO

INSTRUMENT NO. SURVEYOR
SURVEY DATE TIME
VERIFICATION DATE

APPROVAL DATE APPROVAL DOE DATE

Geotech, Inc.

DOE ID NO. GJ-44367
DWG NO. 3-044367-W8 SHT. 5 OF 5

MATCH LINE 8

MATCH LINE 10

MATCH LINE 2

5TH STREET VIADUCT

4TH AVENUE (AKA CRAWFORD AVENUE)

SOIL

(345430-9) P

(460390-9) P

AREA INVESTIGATED 1-24-94

SCALE IN FEET
20 10 0 20 40

NORTH

PHASE F

LEGEND
- BOUNDARY OF CONTAMINATION
- DESIGNATION OF RESIDUAL RADIOACTIVE DEPOSIT
- DEPTH OF CONTAMINATION (INCHES)
- RADIOLOGICAL CONTAMINATED AREA
- COMMINGLED WASTE SAMPLE LOCATION
- (103220) GRID COORDINATES
- C COMPOSITE SAMPLE
- P POINT SAMPLE

This drawing, prepared for the Uranium Mill Tailings Remedial Action Project, is for the sole use of the U.S. Department of Energy and its contractors. It is not a land survey plat or an improvement survey plat and is not to be relied upon for the establishment of fence, building, or other future improvement lines.

PHASE F
FIGURE 21
COMMINGLED WASTE SAMPLE LOCATIONS

NO.	DATE	REVISIONS	BY	CK.	A.E.	APP.

U.S. DEPARTMENT OF ENERGY
GRAND JUNCTION PROJECTS OFFICE, COLORADO

DESIGNED DATE
DRAWN: BKP 11/91
CHECKED
PROJ. ENG.
SUBMITTED MJG 11/91
APPROVAL DATE

DENVER & RIO GRANDE WESTERN R.R.
7TH STREET
GRAND JUNCTION, COLORADO

Geotech. Inc.
DOE I.D. NO. GJ-46387
DWG. NO. 3-044367-WP SHT. 6 OF 6

RESIDENCE—NO. OF OCCUPANTS
NON-RESIDENCE—MAN-HRS./WK.
INSTRUMENT NO. SURVEYOR
SURVEY DATE TIME
VERIFICATION DATE

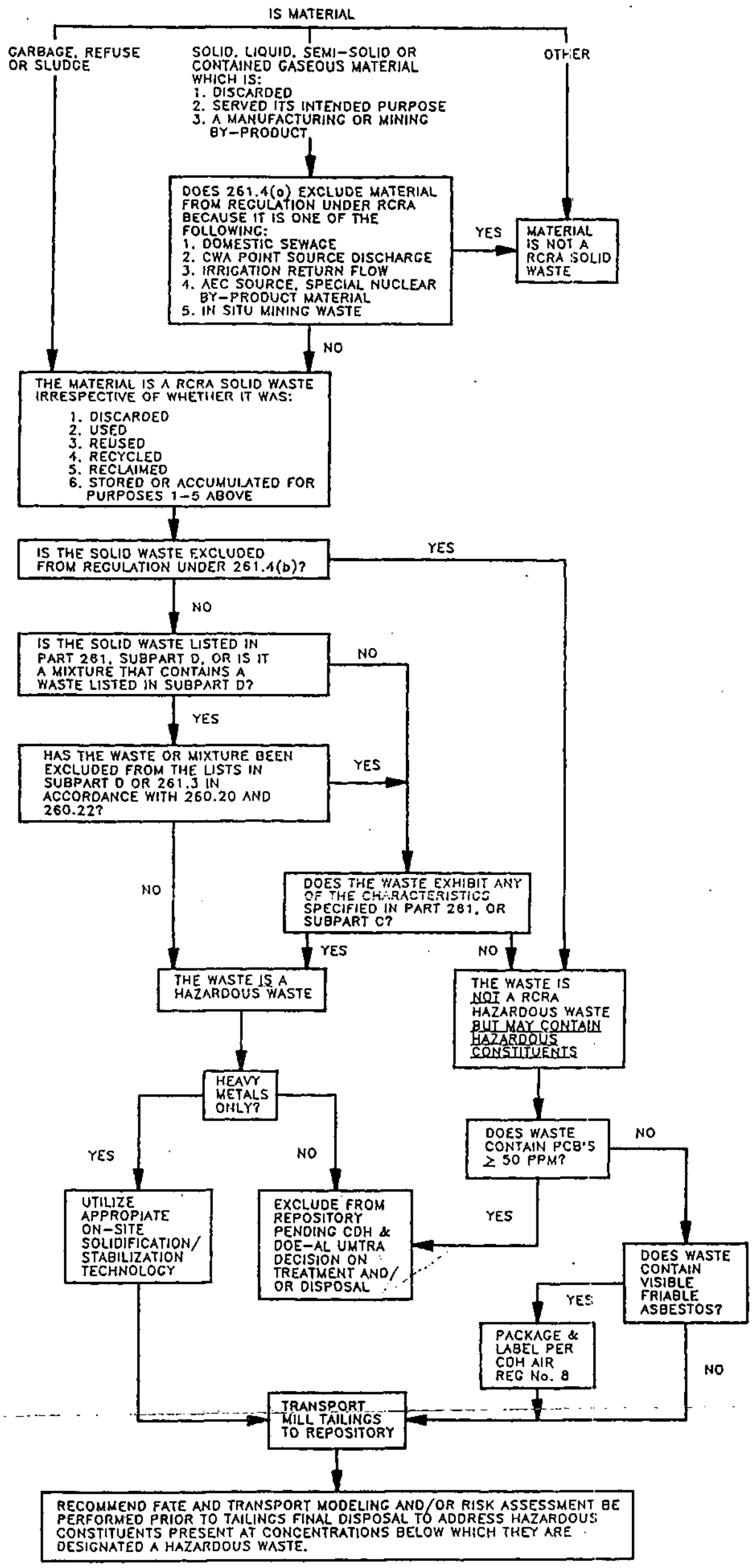


Figure 3

HAZARDOUS/COMMINGLED WASTE INVESTIGATON FLOWCHART